



<110> Jager, Dirk
Scanlan, Matthew
Gure, Ali
Jager, Elke
Knuth, Alexander
Old, Lloyd
Chen, Yao-tseng

<120> Isolated Nucleic Acid Molecules Encoding Cancer Associated Antigens,
the Antigens per se, and Uses Thereof

<130> LUD 5615.1

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<151> 1999-11-30

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TECH CENTER 1600/2900

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 35 40 45
 Lys Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly
 50 55 60
 Ala Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg
 65 70 75 80
 Ser Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val
 85 90 95
 Glu Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu
 100 105 110
 Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys
 115 120 125
 Val Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys
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 Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu
 145 150 155 160
 Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro
 165 170 175
 Lys Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala
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 Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn
 195 200 205
 Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile
 210 215 220
 Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys
 225 230 235 240
 Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys
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Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys Val Gly Ala Asp Arg
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Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys Pro Asn Ser Lys Arg
 65 70 75 80

Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu Asn Ala Ser Ser Asn
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His Asp His Asp Asp Gly Ala Ser Gly Thr Pro Lys Glu Lys Lys Ala
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Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala Lys Ala Glu Arg Glu
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Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile Gly Cys Asp Asn Asp
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Asn Arg
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His Val Glu Leu Phe Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly		
65	70	75
Asn Ser Gly Lys Val Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala		
85	90	95
Gln Ser Asp Lys Pro Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn		
100	105	110
Glu Asn Arg Glu Asn Ala Ser Ser Asn His Asp His Asp Asp Gly Ala		
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Ser Gly Thr Pro Lys Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys		
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Arg Ser Lys Ala Lys Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro		
145	150	155
Ile Asp Pro Asn Glu Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr		
165	170	175
Gly Glu Met Ile Gly Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe		
180	185	190
His Phe Ser Cys Val Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr		
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Cys Pro Lys Cys Arg Gly Glu Asn Glu Lys Thr Met Asp Lys Ala Leu		
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 35 40 45

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Lys Asp Tyr Glu Glu Ser Ser Trp Asp Ser Glu Ser Leu Cys Glu Thr
 65 70 75 80

Val Ser Gln Lys Asp Val Cys Leu Pro Lys Ala Thr His Gln Lys Glu
 85 90 95

Ile Asp Lys Ile Asn Gly Lys Leu Glu Glu Ser Pro Asp Asn Asp Gly
 100 105 110

Phe Leu Lys Ala Pro Cys Arg Met Lys Val Ser Ile Pro Thr Lys Ala
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Leu Glu Leu Met Asp Met Gln Thr Phe Lys Ala Glu Pro Pro Glu Lys
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Pro Ser Ala Phe Glu Pro Ala Ile Glu Met Gln Lys Ser Val Pro Asn
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Lys Ala Leu Glu Leu Lys Asn Glu Gln Thr Leu Arg Ala Asp Gln Met
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Phe Pro Ser Glu Ser Lys Gln Lys Lys Val Glu Glu Asn Ser Trp Asp
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Asp Ser Thr Ser Leu Ser Lys Ile Leu Asp Thr Val His Ser Cys Glu

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Glu Gln Glu Leu Cys Ser Val Arg Leu Thr Leu Asn Gln Glu Glu Glu	290	295	300
Lys Arg Arg Asn Ala Asp Ile Leu Asn Glu Lys Ile Arg Glu Glu Leu	305	310	315
Gly Arg Ile Glu Glu Gln His Arg Lys Glu Leu Glu Val Lys Gln Gln	325	330	335
Leu Glu Gln Ala Leu Arg Ile Gln Asp Ile Glu Leu Lys Ser Val Glu	340	345	350
Ser Asn Leu Asn Gln Val Ser His Thr His Glu Asn Glu Asn Tyr Leu	355	360	365
Leu His Glu Asn Cys Met Leu Lys Lys Glu Ile Ala Met Leu Lys Leu	370	375	380
Glu Ile Ala Thr Leu Lys His Gln Tyr Gln Glu Lys Glu Asn Lys Tyr	385	390	395
Phe Glu Asp Ile Lys Ile Leu Lys Glu Lys Asn Ala Glu Leu Gln Met	405	410	415
Thr Leu Lys Leu Lys Glu Glu Ser Leu Thr Lys Arg Ala Ser Gln Tyr	420	425	430
Ser Gly Gln Leu Lys Val Leu Ile Ala Glu Asn Thr Met Leu Thr Ser	435	440	445
Lys Leu Lys Glu Lys Gln Asp Lys Glu Ile Leu Glu Ala Glu Ile Glu	450	455	460
Ser His His Pro Arg Leu Ala Ser Ala Val Gln Asp His Asp Gln Ile	465	470	475
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 35 40 45
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 50 55 60
 Glu Leu Asp Glu Cys Tyr Glu Arg Phe Ser Arg Glu Thr Asp Gly Ala
 65 70 75 80
 Gln Lys Arg Arg Met Leu His Cys Val Gln Arg Ala Leu Ile Arg Ser
 85 90 95
 Gln Glu Leu Gly Asp Glu Lys Ile Gln Ile Val Ser Gln Met Val Glu
 100 105 110
 Leu Val Glu Asn Arg Thr Arg Gln Val Asp Ser His Val Glu Leu Phe
 115 120 125
 Glu Ala Gln Gln Glu Leu Gly Asp Thr Val Gly Asn Ser Gly Lys Val
 130 135 140
 Gly Ala Asp Arg Pro Asn Gly Asp Ala Val Ala Gln Ser Asp Lys Pro
 145 150 155 160
 Asn Ser Lys Arg Ser Arg Arg Gln Arg Asn Asn Glu Asn Arg Glu Asn
 165 170 175
 Ala Ser Ser Asn His Asp His Asp Asp Gly Ala Ser Gly Thr Pro Lys
 180 185 190
 Glu Lys Lys Ala Lys Thr Ser Lys Lys Lys Lys Arg Ser Lys Ala Lys
 195 200 205
 Ala Glu Arg Glu Ala Ser Pro Ala Asp Leu Pro Ile Asp Pro Asn Glu
 210 215 220
 Pro Thr Tyr Cys Leu Cys Asn Gln Val Ser Tyr Gly Glu Met Ile Gly
 225 230 235 240
 Cys Asp Asn Asp Glu Cys Pro Ile Glu Trp Phe His Phe Ser Cys Val
 245 250 255
 Gly Leu Asn His Lys Pro Lys Gly Lys Trp Tyr Cys Pro Lys Cys Arg
 260 265 270

Gly Glu Asn Glu Lys Thr Met Asp Lys Ala Leu Glu Lys Ser Lys Lys
 275 280 285

Glu Arg Ala Tyr Asn Arg
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Met Gln Lys Thr Val Pro Asn Lys Ala Phe Glu Leu Lys Asn Glu Gln			
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Thr Leu Arg Ala Ala Gln Met Phe Pro Ser Glu Ser Lys Gln Lys Asp			
	405	410	415
Asp Glu Glu Asn Ser Trp Asp Ser Glu Ser Pro Cys Glu Thr Val Ser			
	420	425	430
Gln Lys Asp Val Tyr Leu Pro Lys Ala Thr His Gln Lys Glu Phe Asp			
	435	440	445
Thr Leu Ser Gly Lys Leu Glu Glu Ser Pro Val Lys Asp Gly Leu Leu			
	450	455	460
Lys Pro Thr Cys Gly Arg Lys Val Ser Leu Pro Asn Lys Ala Leu Glu			
	465	470	475
Leu Lys Asp Arg Glu Thr Phe Lys Ala Glu Ser Pro Asp Lys Asp Gly			
	485	490	495
Leu Leu Lys Pro Thr Cys Gly Arg Lys Val Ser Leu Pro Asn Lys Ala			
	500	505	510
Leu Glu Leu Lys Asp Arg Glu Thr Leu Lys Ala Glu Ser Pro Asp Asn			
	515	520	525
Asp Gly Leu Leu Lys Pro Thr Cys Gly Arg Lys Val Ser Leu Pro Asn			
	530	535	540
Lys Ala Leu Glu Leu Lys Asp Arg Glu Thr Phe Lys Ala Ala Gln Met			
	545	550	555
Phe Pro Ser Glu Ser Lys Gln Lys Asp Asp Glu Glu Asn Ser Trp Asp			
	565	570	575
Phe Glu Ser Phe Leu Glu Thr Leu Leu Gln Asn Asp Val Cys Leu Pro			
	580	585	590
Lys Ala Thr His Gln Lys Glu Phe Asp Thr Leu Ser Gly Lys Leu Glu			
	595	600	605
Glu Ser Pro Asp Lys Asp Gly Leu Leu Lys Pro Thr Cys Gly Met Lys			
	610	615	620
Ile Ser Leu Pro Asn Lys Ala Leu Glu Leu Lys Asp Arg Glu Thr Phe			
	625	630	635
Lys Ala Glu Asp Val Ser Ser Val Glu Ser Thr Phe Ser Leu Phe Gly			

645										650					655				
Lys	Pro	Thr	Thr	Glu	Asn	Ser	Gln	Ser	Thr	Lys	Val	Glu	Glu	Asp	Phe				
				660					665					670					
Asn	Leu	Thr	Thr	Lys	Glu	Gly	Ala	Thr	Lys	Thr	Val	Thr	Gly	Gln	Gln				
				675					680					685					
Glu	Arg	Asp	Ile	Gly	Ile	Ile	Glu	Arg	Ala	Pro	Gln	Asp	Gln	Thr	Asn				
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Lys	Met	Pro	Thr	Ser	Glu	Leu	Gly	Arg	Lys	Glu	Asp	Thr	Lys	Ser	Thr				
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Ser	Asp	Ser	Glu	Ile	Ile	Ser	Val	Ser	Asp	Thr	Gln	Asn	Tyr	Glu	Cys				
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Leu	Pro	Glu	Ala	Thr	Tyr	Gln	Lys	Glu	Ile	Lys	Thr	Thr	Asn	Gly	Lys				
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Ile	Glu	Glu	Ser	Pro	Glu	Lys	Pro	Ser	His	Phe	Glu	Pro	Ala	Thr	Glu				
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Met	Gln	Asn	Ser	Val	Pro	Asn	Lys	Gly	Leu	Glu	Trp	Lys	Asn	Lys	Gln				
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Thr	Leu	Arg	Ala	Asp	Ser	Thr	Thr	Leu	Ser	Lys	Ile	Leu	Asp	Ala	Leu				
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Pro	Ser	Cys	Glu	Arg	Gly	Arg	Glu	Leu	Lys	Lys	Asp	Asn	Cys	Glu	Gln				
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Ile	Thr	Ala	Lys	Met	Glu	Gln	Met	Lys	Asn	Lys	Phe	Cys	Val	Leu	Gln				
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Lys	Glu	Leu	Ser	Glu	Ala	Lys	Glu	Ile	Lys	Ser	Gln	Leu	Glu	Asn	Gln				
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Lys	Ala	Lys	Trp	Glu	Gln	Glu	Leu	Cys	Ser	Val	Arg	Leu	Pro	Leu	Asn				
				850					855					860					
Gln	Glu	Glu	Glu	Lys	Arg	Arg	Asn	Val	Asp	Ile	Leu	Lys	Glu	Lys	Ile				
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Arg	Pro	Glu	Glu	Gln	Leu	Arg	Lys	Lys	Leu	Glu	Val	Lys	His	Gln	Leu				
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Glu	Gln	Thr	Leu	Arg	Ile	Gln	Asp	Ile	Glu	Leu	Lys	Ser	Val	Thr	Ser				
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Asn	Leu	Asn	Gln	Val	Ser	His	Thr	His	Glu	Ser	Glu	Asn	Asp	Leu	Phe				
				915					920					925					
His	Glu	Asn	Cys	Met	Leu	Lys	Lys	Glu	Ile	Ala	Met	Leu	Lys	Leu	Glu				
				930					935					940					
Val	Ala	Thr	Leu	Lys	His	Gln	His	Gln	Val	Lys	Glu	Asn	Lys	Tyr	Phe				
				945					950					955					
Glu	Asp	Ile	Lys	Ile	Leu	Gln	Glu	Lys	Asn	Ala	Glu	Leu	Gln	Met	Thr				
				965					970					975					
Leu	Lys	Leu	Lys	Gln	Lys	Thr	Val	Thr	Lys	Arg	Ala	Ser	Gln	Tyr	Arg				
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Glu Gln Leu Lys Val Leu Thr Ala Glu Asn Thr Met Leu Thr Ser Lys
995 1000 1005

Leu Lys Glu
1010

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